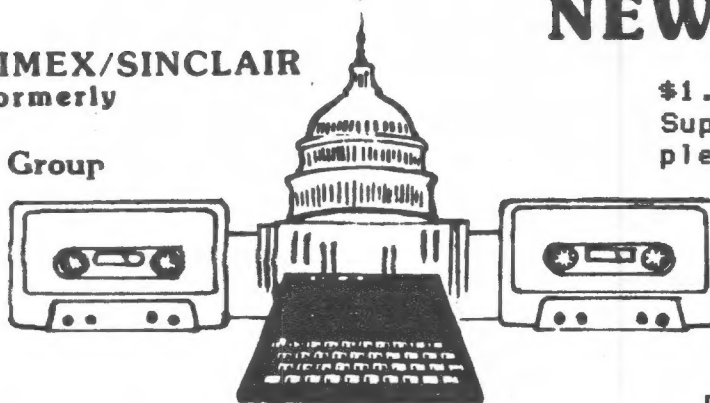# CATS

CAPITOL AREA TIMEX/SINCLAIR USERS GROUP :Formerly
Prince George's
Timex/Sinclair User's Group

NEWSLETTER

$1.00 per copy
Support your computer-
please join our club

December 1985
Vol. 3, No. 8

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Will You Ignore This Issue?

Are you one of the 60 current members that, statistically, won't renew your membership this year? Perhaps your machine is on the closet shelf, or replaced by a Cray 1. At least, please read the first paragraph below.

First of all: Renew!

Now is the time! 99% of your $15.00 dues goes to cover printing and mailing of this newsletter. Each individual member's dues will pay for 150 11x17 pages. If we go to first class mailing, we'll be cutting the budget even closer. Better than 175 people felt that we were worth a year's dues last year. We need <u>all of you</u> to continue getting this out to the members. Let's keep all of you for the next year!

From The Editor

I'm wearing two hats this month — John Conger has personal activities that have priority over his usual contribution to this newsletter (imagine that!)

Second of all: Newsletter Writing

Even after renewals, this newsletter can only survive with your contributions. If you look through this issue, you will notice that an awful lot of the articles are followed by "MF." That's me. I'm not trying to hog things — the standard policy is to publish <u>every</u> submission by members, along with selected articles stolen from other n/l's and outside writers.

There's a lot of new stuff out there — and I hear members at every meeting telling about a dynamite new program, a new supplier, or a clever programming hack — but these bits don't get written

up for the newsletter. I'm not going to act as staff writer — If you learn about something in the world of computing, share it!

Next month, I'm going to list those members that have learned new things, but haven't taken the time to let the 175+ other members know.

Last Meeting — the Bill Russell Show

We had the incredible good fortune to have Bill Russell, of Speech Recognition and Winky Board fame, to give a presentation on his current line of items for the Sinclair computers. Some of his offerings smacked of magic — color images on a black and white TV, for instance — but all were solidly based on scientific principles.

Color on B/W TV

Yes it's possible. The program is for the T/S 1000, and uses a principle that Bill Russell was

responsible for investigating in the '50s. Only now with the advent of the <u>cheap</u> personal computer, has the effect been reproducible in a controlled manner for ordinary people.

The effect is based on the ability of the eye to percieve specific colors at specific flicker rates. I suspect that the percieved colors are due to the difference in recovery rates between the color receptors in the eye. 98% of the audience could see the effect; it depends on broad spectrum incandecent or natural light (which we didn't have). In addition, certain flicker rates can trigger epileptic episodes in sensitive individuals, though the original settings are more rapid than the dangerous range.

Bill's program allows the user to custom tailor the flicker rates to optimize the effect, as well as to put more than one color on the screen at a time. It also includes a basic graphics program to design the screens.

Speech Recognition

Bill has developed a combination of hardware and software that can recognize up to ten distinct sounds. It is based on spectral analysis of the given words, averaged across the entire word. More sophisticated spectral analyzers can show the change in frenquencies during the word, but Bill's device was actually able to let the 1000 (a 2068 version is available as well) to recognize remarkably similar words.

Additional devices Bill brought to show included his Winky II patch board, and a Kempson joystick adapter for the 2068's cartridge port (designed by a local talent that wishes to remain anonymous).

Also at the meeting....

Tom Bent gave a rather complete overview of the Sinclair QL computer - an impressively complex and capable machine, with abilities that haven't even been imagined before in the Sinclair canon. In addition, I covered the principles behind pulling out the data files behind VU-CALC to print on an 80 column printer; see past n/l for details.

Buy Line

A number of Sinclair oriented flyers have surfaced in the last month, and here are some of the ones that haven't been lost.

R&S Distributors, 110 Highhill Road, Bridgeport NJ 08014 offers a catalog of surplus and discontinued items. Chief among them is an RGB monitor for $134.75 (!!)

Susan Ziegler (Quicksilva), 14307 Ben Brush, San Antonio TX 78248 is closing out her line of Spectrum programs @ $4.00 each, or $17.50 for all six: The Snowman, Time-Gate, Boogaboo, Fred, Grid Runner, Traxx. Also two premium games who's blurbs sound like the newest thing in artificial intelligence, PSYTRON and Lords of Midnight, @ $8/ea or $14.50 the pair.

WMJ Data Systems, 4 Butterfly Dr., Hauppage NY 11788, offers a complimentary copy ofhis quarterly, QTS, for a SASE. Also Timex books @ $8.00 ea; write for list.

Hal-Tronix, PO Box 1101 - Dept R, Southgate MI 48195 (313) 285-1782, offers T/S 1000's @ $19.00 less manual, power pack and warranty.

A variety of suppliers offering the QL at $299.00: all the flyers have been lost. Curry, Russell, Sharps, Gesang, Sunset, Knighted and others. Some at $289.00.

D Lipinski Software, 2737 Susquehanna Rd., Roslyn, PA 19001, offers a buyer's guide to active Timex suppliers and products, with updates @ $20.00.

Local Resources

Romulus Microcontrol Inc., PO Box 8669, Rockville, MD 20856, (301) 540-8863, offers EPROM chips and programming services.

Micro-Age Computer Store on Rockville Pike is offering a T/S 1000, 16K RAM, 2040 Printer, and 6 games for $100.00.

Persistent rumors of 16K RAM packs at Ritz for close out prices...

Electronics Plus on Route 1, has surplus RAM boards, looks like 256K dynamic RAM, for $14.95.

Mark Fisher

Officialdom

N/L Deadline.......	Meeting Date
	December 14
December 20	January 11
January 17	February 8
February 14	March 8
March 14	April 12

Here is a program to impress your friends and family who keep saying, "So what can you do with your computer", or "What good is it."

Taken from <u>SYNCHRO-SETTE</u> Magazine, Vol. 1 No. 8, Nov. 1982.
Modified by Jim Wallace, PG-ZUG.   <u>2k RAM minimum required</u>

```
1 REM * HAPPY HOLIDAYS
10 FOR N=1 TO 176
20 PRINT CHR$ 128+CHR$ 128+CHR
$ 128+CHR$ 128;
30 NEXT N
40 FOR N=1 TO 10
50 LET A=(15*RND)+2
60 LET B=(25*RND)+2
70 PRINT AT A-1,B;CHR$ 151;AT
A,B;CHR$ 1+CHR$ 132;AT A+1,B-1;C
HR$ 1+" "+CHR$ 132;AT A+2,B-2;C
HR$ 1+"   "+CHR$ 132;AT A+3,B;C
HR$ 5
80 NEXT N

900 LET A$=""
910 FOR N=1 TO 30
920 LET A$=A$+CHR$ 151
930 NEXT N
940 LET B$="128173166181181190"
941 LET B$=B$+"128173180177174"
942 LET B$=B$+"169166190184128"
943 LET B$=B$+"171183180178128"
944 Let B$=B$+"128177184186172"
945 LET B$=B$+"128151128181172"
946 LET B$=B$+"150191186172128"
950 FOE N=1 TO LEN B$-2 STEP 3
960 LET A$=A$+CHR$ VAL B$(N TO
N+2)
970 NEXT N

1000 PRINT AT 11,1;A$( TO 30)
1010 LET A$=A$(2 TO LEN A$)+A$(1
)
1020 UNPLOT RND*62,RND*43
1030 GOTO 1000

1100 SAVE "CARD"
1110 RUN
```

REPORT FROM ITALY

The Sinclair computer family is alive and well in Italy. On a visit there the first part of October I found the Sinclair Spectrum and QL widely available. Home computers seem to be an area of great interest. Philips offers a television set with a built in print-out unit. Almost every corner newspaper stand seems to offer not only computer magazines devoted to the Sinclair but also tape cassettes as well. Prices are quite reasonable. A cassette runs about $6 and magazines about $4. I bought an excellent book of 20 programs, my only trouble is how that I can't read Italian.

Roald Schrack

TAPE DUBBING

By Jim MacKenzie

Late again, I hope I can get this to Mark before the deadline. I'm sorry I missed last month's deadline, but I really need some help running the tape dubbing, please. It's an easy job, anybody can do it.

Well I'm glad to see the programs that you've been donating. There are almost forty minutes of new TS 1000 programs, as well as many new programs for the 2068. I'll soon have a list of them, and put it in the newsletter when it's ready. I also plan to write a more discriptive list.

Anybody wishing to loan us a program contact mark or myself at the meeting or home.

Jim MacKenzie After 6 pm 495-9139

Mark Fisher 589-7407

TS 2068

PICTURE POPPER

by George White

Instructions for using the various display modes available on the 2068 seem to be beyond the scope of every book that I have come across. Display Mode 3 is described in the manual as instantly switching between two display files, but in my short experience with the 2068 I haven't been able to find the proper incantation to conjure up this "second page" mode.

The Z80 CPU can transfer 6912 bytes into Display/Attributes File 1 so fast that it seems instantly. Therefore why not use a LDIR instruction to load the display file from as many storage areas as allowed by memory size restraints?

The Basic program below (list 1) will load a machine code routine into memory at 65349 which will transfer whatever is on screen into either of two blocks of memory, depending on which USR number is used. RANDOMIZE USR 65349 will cause the screen to be copied into memory location 51509 thru 58420. RANDOMIZE USR 65354 will load memory locations 58421 thru 65332 with Display/Attribute File. Then a simple POKE 65360, 235 prepares the machine code routine to POP a picture onto the screen. RANDOMIZE USR 65349 pops the first and RANDOMIZE USR 65354 pops the second.

This demo program does not protect the memory used from being overwritten but there is room enough to hold five screens if memory is free from 30772 to RAMTOP so this PICTURE POPPER might serve as yet another display mode.

***   ***

list 1

```
10 FOR I= 65349 TO 65366
20 READ A
30 POKE I,A
40 PRINT I; TAB 8; PEEK I
50 NEXT I
60 DATA 17,53,201,24,3,17,53,
   228,33,0,64,0,1,0,27,237,
   176,201
```

RUN this Basic program to load the machine code.

Create a picture on the screen in any manner.

RANDOMIZE USR 65349 will store the screen at 51509.

Create another picture on screen.

RANDOMIZE USR 65354 will store the second screen at 58421.

POKE 65360, 235 prepares the M C to POP pictures to the screen.

RANDOMIZE USR 65349 now displays the first saved picture.

RANDOMIZE USR 65354 now displays the second saved picture.

To save both pictures and routine to tape:
    SAVE "name" CODE 51508, 13859

***   ***

Puzzle Time

Last month's puzzle (to construct a program to successively fill in the halfway points in a line) met with no response, so I have no better solution than the one I proposed last month.

This month's problem also arises from a program I'm working on. If you have two points (m and s), each travelling along a straight line in the plane, can you predict their point of closest aproach?

M travels from point m1 to point m2, and S travels from s1 to s2. At any given time, their distance is given by the Pythagorean theroem. I remember enough calculus to know that this problem is solvable, but not enough to do the work.

If anyone else hits a knot in your programming, write it up and send it in for the general membership to work on.

MF

CRYPTOGRAM:

HIW YESTU FTYFRA AWWGA HE XW

KNOWS ULSNKM HIW IETNUFRA; GFRXW

FTT EP HIW SFAOFTA YFKH HE MWH

EPP EP AFKHF'A "KFLMIHR" TNAH.

solution on p. 9 G. White

Softaid Review

Mark Fisher

I ran a notice of this program a few months ago. The deal looked so good, I put up my own $8.95 to Susan Ziegler, at 14307 Ben Brush, San Antonio TX, 78248. Delivery was slow - tempered by a written apology for the delay in the shipment from England, but the program as it arrived was all that had been promised. I should point out at the beginning that I'm not a heavy game player, and that this tape represents the cream of the '84 games; I don't know how far beyond this crop current graphics have gone.

If you missed the first notice, this tape is a benefit tape for Ethiopian famine relief, an offshoot of Bob Geldorf's celebrity concerts, Band-Aid and Live-Aid. Indeed, the tape includes two lo-fi copies of Geldorf's original celebrity song, "Do they know it's Christlmas?" that provided the inspiration for the USA's "We Are the World." This is a famine relief benefit: any piracy is literally taking food from starving mouths.

Back to the Games

The tape includes ten games from ten different software houses. Each is different in concept and execution. Almost all use some form of fastload to speed the loads; these are full bore games, and most use the full 48K of RAM in the Spectrum. All ten loaded, after some fine tuning with the azimuth, and all ten worked fine using a Spectrum ROM in an Oliger cartridge board. My lack of a Kempson joystick i/f made some of the games harder, but I've heard rumors of a Kempson conversion for port #2 of the 2068. I'm waiting.

Spellbound

A pleasant, difficult semi-abstract game. You must cover every step of a pyramid, while avoiding the baddies - and the edge of the Pyramid. Us duffers would like a beginning level that allows us to survive more that 5 seconds to start, however.

© BEYOND 1984

PROGRAM BY P.W.NORRIS

Starbike

A Defender clone - well done, with good keyboard response. I missed the radar screen at the top.

Kokotoni Wilf

A cross between Joust and Jet Set Willy. Nice graphics, but undistinguished, except by its great name.

The Pyramid

A cross between the seperate screen concept of Jet Set Willy or Miner 49'er, and Asteroids. If that sounds strange, I think that was the intension. I found the knowledge that there were 120 different chambers to visit daunting.

Horace Goes Skiing

The one game I'd heard of before I bought the tape. I don't know how the featured situation (the ski slope) works, as I died every time I tried to cross the Frogger style road. Last month's n/l includes a hack to get rid of the road; I haven't tried it.

Gilligan's Gold

A Miner '49er clone. Nicely done, with zillions of ways to die instantly.

Ant Attack

A maze/adventure game - the best of the tape. Consistent original thinking, from the 3-D view of the ant's city, to your choice of the sex of the distressed person you are to rescue. You are fighting a city controlled by hunderds of killer ants (they're bigger than you are), and searching for the aformentioned distressed damsel/gallant. On your side, you have hand grenades, the ability to climb small walls, the stamina to withstand a given number of ant bites, and the ability to change the view of the city, so that you can follow your hero/heroine down the alleys.

The game starts out with a duffer's level, so that everyone gets a taste of success. Dialog is printed to let you know how things are going; from "An and bit you," to "My Hero!" I'm glad there aren't any sound effects. I don't need the subtle scritchel of hundreds of chitinous legs in the neighbor alley.

Jack and the Beanstalk

Incredibly touchy adventure game built on the Miner '49er framework. Perhaps a joystick would help.

Sorcery

I confuse this one in my memory with Kokotini Wilf. I liked the flap control to fly, and things started off at a slower pace, which I needed. All right, if you need to burn time.

3-D Tank Duel

This was the reason I bought the tape, and I wasn't disappointed. In quality it's #2 on the tape after Ant Attack. It's a close clone of the vector graphics arcade tank duel that was adopted by the US Army for preliminary tank training. It's real-time, and as sharp as a raster scan video display can be expected to be. Comes complete with radar, threat annunciator panel, obstacles to dodge, enemy tanks, and flying saucers in two flavors.


```
SCORE 00000      HIGH  05000
```



```
SCORE 00100      HIGH   05000
```
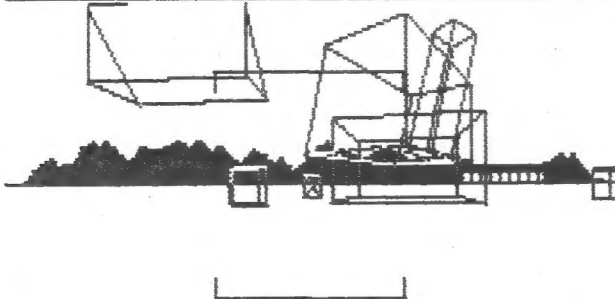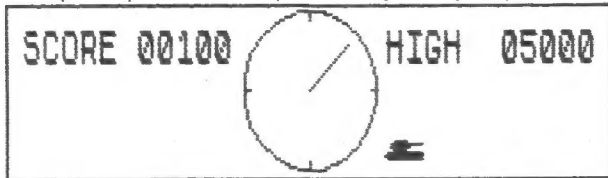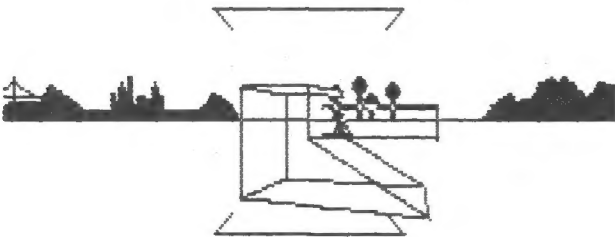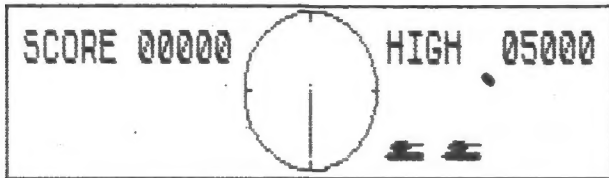

Finally: Each of these games represents immense effort on the part of the authors. These are not just throwaways to be donated to a charity. If you pirate this tape, you will be doubly cursed - first by the authors that spent their months perfecting these games, and second by the famine ridden people the sale of this tape was intended to benifit.

MF

Time to RENEW

As you read this, you fall into one of three catagories.

1. You have ceased being an active T/S user. Renew anyway! If you have been helped at all over the last year, your dues will help to get the newsletter to a broad range of computerists in the capital area, and across the country.
2. You are an old-time member. Renew! It's your continued support that has kept us going into our fourth year. Thanks for helping!
3. You just joined this year. Renew now! By renewing at the beginning of the year, you reduce the amount of paperwork we have to do throughout the year, and increase your chances of getting your check back.

The budget has no fat in it. If we don't have enough members, we won't have the same newsletter we enjoyed last year.

No "deals." No "Premiums." Just, simply, your dues are needed to keep CATS going.

$15.00. Great thanks to all of you.

John Conger, President
Jules Gesang, VP
Tom Bent, VP
Sarah Fisher, Treasurer
Mark Fisher, Editor

Two-Fer One; A Double Duty Oliger Board

The Oliger EPROM cartridge board comes with two sockets, and the ability to place the two sockets at your choice of addresses in memory. However, if you have more than one EPROM that should reside at one address, it is practical to add a single pole, double throw switch so that you have a choice of which EPROM is activated. Thus, with a flip of the switch (with the machine off), you can switch from Zebra's 64 column operating system, for example, to M-SCRIPT.
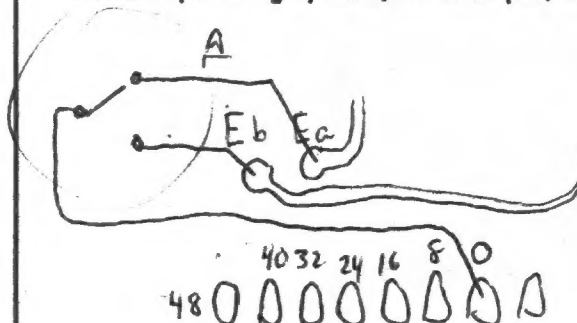
Add subminiature single pole, double throw toggle switch at point "a".

HACK Them Games!
Spectrum Edition
Volume II
by Paul Millan

From The National Software Library,
and LIST

A number of modifications ot further games were left off the list last month but due to popular demand (one vote) the rest are included here - at least those that could be deciphered.

They cover Frank n Stein, Psytron, Pssst, Jetpac, Project Future, Zip-Zap, TutanKhamen, Defenda, Mr. Wimpy, Monty Mole, Eskimo Eddie, Luna Jet Man, Moon Alert, and Horace & the Spiders. If you're interested, come to a diehard's meeting to check up on what's there.

Mark Fisher
949-7407

TutanKhamun

POKE 27783,0	Infinite lives

Defenda

POKE 34163,0	Infinite smart bombs
POKE 35730,x	x=number of lives

Mister Wimpy

POKE 33501,0	Skip first stage
POKE 33509,x	x=number of lives <32
POKE 33721,x	x=number of peppers
POKE 33693,0	infinite lives
POKE 43105,0	infinite peppers

Monty Mole

POKE 38004,0	Infinite lives
POKE 36301,201	No crushers
POKE 35784,255	Lets Monty fall a great height

Eskimo Eddie

POKE 24686,24: POKE 24687,76	Infinite lives

Lunar Jet Man

POKE 37999,201	No enemy
POKE 43092,x-1	x=level

Moon Alert

POKE 37035,201	No enemies in air
POKE 42654,195	Nothing kills you

Horace and the Spiders

POKE 27680,0: POKE 24960,0	Infinite lives

Scuba Dive

POKE 65711,x	x=number of lives
POKE 45696,0 frequently	player #2's clams open less

Ah Diddums

POKE 24942,x	x=number of lives <250

Project Future

POKE 27662,0	Gets rid of the aliens

Jetpac

POKE 25373,x	x=number of lives
POKE 25020,0	infinite lives
POKE 28075,0	Take off with one fuel pack

Pssst

POKE 24824,0	infinite lives

Atic Atac

POKE 36519,0	infinite lives

Psytron

POKE 41191,0	Endless men
POKE 26142,62: POKE 26143,266: POKE 26144,0 Endless oxygen	

Frank n Stein

POKE 28277,x	x=number of lives

Moon Alert

POKE 42249,24	Stops time decreasing
POKE 42404,x	x=number of lives
POKE 39754,0	endless lives

THE LAST POKE

At last, I've done it! I've found a POKE to get rid of Jet Set Willy!! It's: POKE JET SET WILLY, BIN. And it works.

Mal Goodman, Leeds (<u>Your Spectrum</u>)

Hi-Res Mandelbrot Plotting — On the 1000

by Mark Fisher

The last few months' issues of this N/L have held articles on graphic display of the Mandelbrot set. Due to the easy display of Hi-Res on the 2068, the good old 1000 has been left out.

This is unfair to the 1000, both because the 1000 is perfectly capable of hi-res output to its 2040 printer, and because it offers the ability to dedicate a machine for the 24-48 hours needed to generate a screen without interfering with the common uses of the 2068. In fact, since the 1000 must be in FAST mode most of the time, it's not even necessary to keep the TV attached, freeing it up to watch Pro Wrestling Bowling for Dollars.

Another advantage of the 1000 is that it is not bound to the 2068's 175 pixel vertical size. Since the 1000 is outputting to an 80 yard roll of paper, it can keep calculating new areas of the set for as long as your patience holds out or until your power fails.

In terms of speed, the 1000 is perhaps 10% slower than the 2068 - but weigh that against having free use of your main computer while the plot thickens.

The Program

Like last month's 2068 version, the natural flow of the program has been interrupted in an attempt to maximize the speed of the program. The parts of the program that are only used once are at the end, and the variables that are most used are called out by single letters, and are set up as the first in the variables area.

The Hi-res plotting routines are adapted from a program by Mihaly Grell. The picture is built up in blocks of eight scan lines, and stored in A$0. A low-res reflection of the plot is sent to the screen in short flickers of SLOW mode - just enough to verify that the program is still running.

Y determines which scan line is being worked on, and V ensures that a new section of the number plane is chosen for each run of Y's. After each set of eight scans, V is incremented by eight before Y is allowed to increment from 0 to 7 again. BCORNER-(v+y)*GAP determines the point on the imaginary axis of the complex number plane that is being examined.

Just one catch: in the two times I've tried out the program, there was a mysterious crash after 24 lines in the first case and 30 lines in the second. As this may have been due to RAM-pack wobble, my next project is to generate a 2K hi-res routine. Any help will be welcomed and acknowledged.

ACORNER =-2
BCORNER =1
SIDE = 2.5
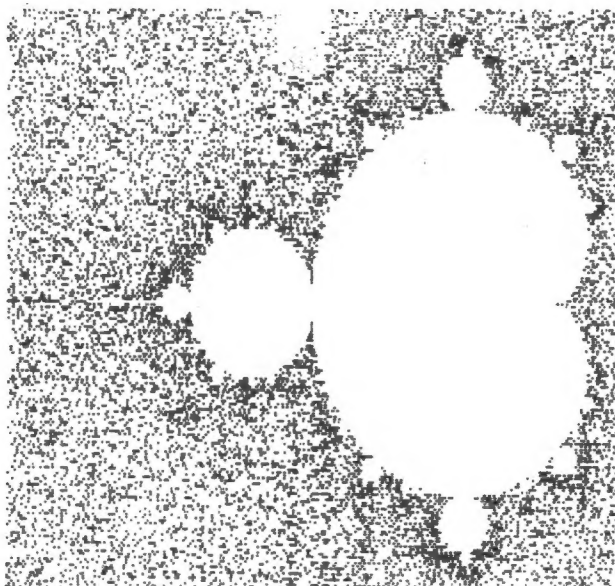
In this image, I have exchanged axes, mapping the real axis along the Y axis, and the Imaginary along the X.

ACORNER =0.5
BCORNER =1
SIDE = 2
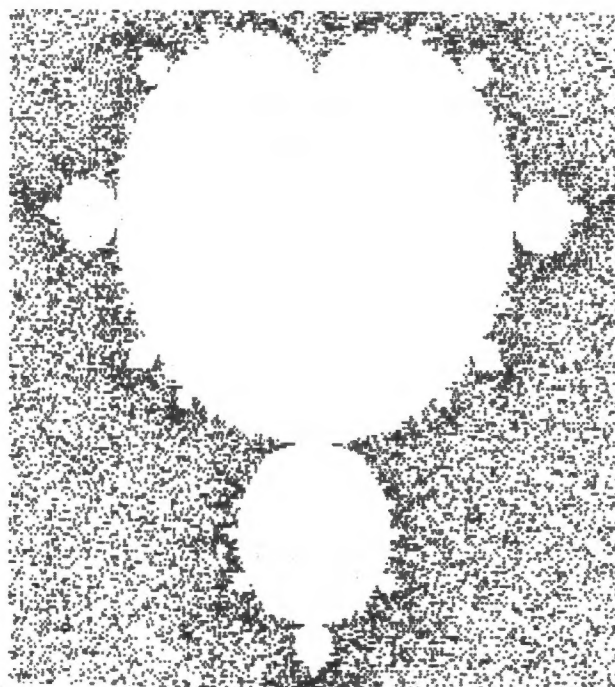

```
10 FAST
20 GOTO 8000
30 REM *** ITERATION ***
40 FOR K=1 TO 50
50 LET T=E
60 LET E=2*D*E+B
70 LET D=D*D-T*T+A
80 IF D*D+E*E>4 THEN GOTO 500
90 NEXT K
95 RETURN
```

```
100 REM *** MAIN LOOP ***
110 FOR Y=0 TO 7
120 FOR X=0 TO 255
130 LET A=X*GAP+ACORNER
160 LET B=BCORNER-(V+Y)*GAP
170 LET D=0
180 LET E=0
190 GOSUB 30
200 NEXT X
210 NEXT Y
220 LET V=V+8
230 GOSUB 900
235 SLOW
236 SCROLL
240 DIM A$(8,32)
245 FAST
250 GOTO 100
500 REM *** HI-RES PLOT ***
501 SLOW
510 IF S>K THEN LET S=K
515 FAST
520 IF RND*(50-S)+S-10)=K THEN
GOTO 590
530 PLOT INT (X/4),1-INT (Y/4)
540 LET K=INT (X/8)+1
550 LET BIT=K*8-(X+1)
560 LET J=INT (Y+1)
570 LET BYTE=CODE A$(J,K)
580 LET BYTE=BYTE+2**BIT
585 LET A$(J,K)=CHR$ BYTE
600 RETURN
900 REM *** LPRINT HI-RES ***
910 FOR K=1 TO 32
920 FOR J=1 TO 8
930 POKE 32255+J+8*(K-1),CODE A
$(J,K)
940 NEXT J
950 NEXT K
960 FOR K=0 TO 31
970 POKE 16444+K,K
980 NEXT K
990 RAND USR 31744
1000 RETURN
8000 REM ****** SETUP ********
8010 LET D=0
8020 LET E=D
8030 LET A=D
8040 LET B=D
8050 LET T=D
8060 DIM A$(8,32)
8100 REM ** SETUP HI-RES LPRINT
8110 FOR K=0 TO 112
8120 POKE 31744+K,PEEK (2161+K)
8130 NEXT K
8140 POKE 31800,63
8150 POKE 31857,201
8200 PRINT "REAL COORD. =";
8210 INPUT ACORNER
8220 PRINT ACORNER;TAB 0;"IMAGIN
ARY COORD. =";
8230 INPUT BCORNER
8240 PRINT BCORNER;TAB 0;"SIDE =
";
8250 INPUT SIDE
8260 PRINT SIDE
8270 LPRINT "ACORNER =";ACORNER
8280 LPRINT "BCORNER =";BCORNER
8290 LPRINT "SIDE =    ";SIDE
8300 LET GAP=SIDE/255
8310 LET S=100
8320 LET V=0
8400 GOTO 100
8990 PRINT "HI"
9000 CLEAR
9010 INPUT A$
9020 IF A$="S" THEN GOTO 9900
9030 PRINT A$
9040 GOTO 9010
9900 SAVE "MAND100"
9910 IF INKEY$="" THEN GOTO 9910
9920 IF INKEY$="S" THEN GOTO 990
0
9930 RUN
```

After the POP, Part II

Last month, I told of my adventures in tracking down the defective component in someone else's computer that I felt I had trashed.

When last we left the poor little 2068, it had just been sent off to Timex Little Rock to be repaired. Shortly before the November meeting, I recieved a replacement machine from Timex. As they have stated over the phone, it was a different machine. I tried it out, and it worked fine. I brought it over the the owner's house, and we plugged the extension board back in – while it was off, this time. We turned the power on, and POP! The same memory chip blew.

I felt better; after all, my negligence probably hadn't caused the crash in the first place. The owner took it well. He checked with Timex, and was told that warranty repairs are guaranteed for 90 days. Now all he'll have to do is pack it back up and return it a second time. Oh, yes... the extension board had three shorts, one between the unregulated 15v and an address line.
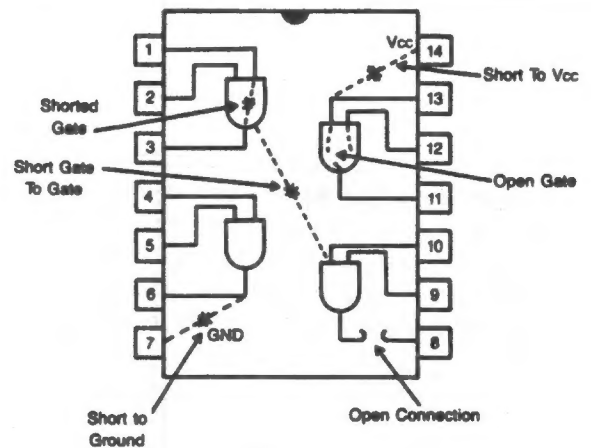
MF

Fig. 4-9. The 74LS08 is a quad two-input AND gate. There are six common ways it can fail.

Unclassified

FOR SALE: 3 mo. old 2068; $100.00; A&J Microdrive for 2068, Now; $125: Buy both for $189.00. Kai Cherry, 301 466-4770

CRYPTOGRAM Solution:
THE WORLD ALWAYS SEEMS TO BE NICER DURING THE HOLIDAYS; MAYBE ALL OF THE RASCALS WANT TO GET OFF OF SANTA'S "NAUGHTY" LIST.

Images from the Mandelbrot Set

The following are some views of the Mandelbrot Set that have been generated over the last month.

A series of zooms, centering on the area near -.994882482, .30012098, with a side of .013901. A final magnification, with a side of .000879128, was lost when I SAVEd the screen without plugging the MIC cord in. Hmmm...

A section of the full Set, as plotted on a Mackintosh. The Mac's Basic seems to be a little faster than the 2068's – and the maximum magnification is certainly greater (with 21 signifigant digits) – but the screen has four times the area, so filling the whole screen can be very slow. (even the Mac needs fresh printer ribbons sometime)

Local Users Groups

Last month, John Conger attended an ad-hoc meeting of Washington area user's groups. Both the IBM group and the Apple group attended, along with CATS, and five other smaller groups.

Propsals to unite as one super-group were discussed, as well as common difficulties (e.g. mailing delays and meeting hall blues). No firm plans were made, but motion at least was initiated.

John came away with some perspective on our club. First, we aren't that small. We might be number four in the area, after IBM, Apple, and Commodore. Second, we may be the most active, in terms of percentage of members attending. Third, we aren't alone in fighting the Post Office – at least one group lost an entire month's mailing into the maw.

The bottom line? We need your continued support. Send in your $15.00 for next year's dues to our box, or bring it to the next meeting.
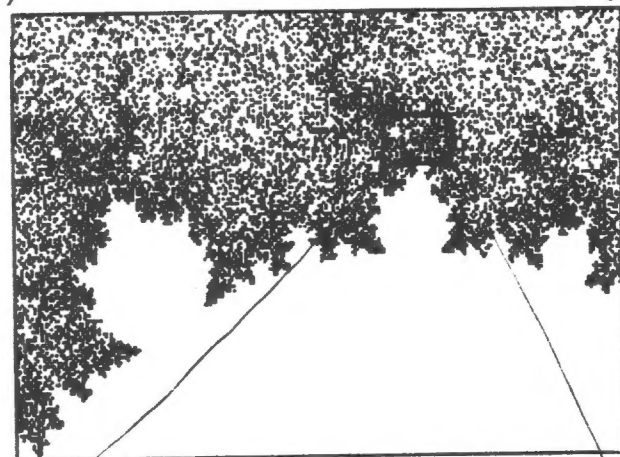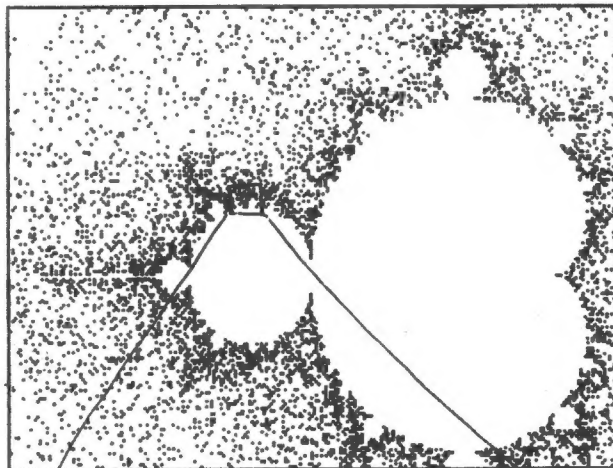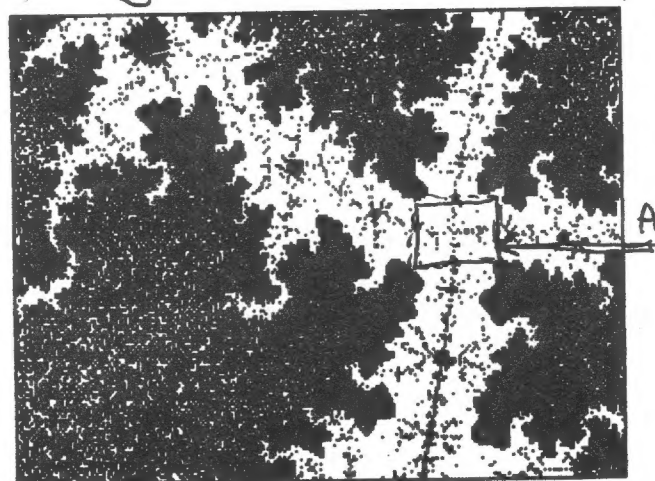
At the final magnification of the area marked "a", the eight barred structures were seen to repeat along the axes of the filaments. It was necessary to increase the number of repetitions to 100 to get any detail this near to the actual set. Points requiring below 50 reps are shaded, 50 to 100 are white, and beyond 100 are full black. Note the miniature figure eight marked "b". It has been mathematically proven that all such points are tied by a filament of numbers within the set to the parent body. Jake Brodsky proposes a competition to identify the thinnest filament possible.
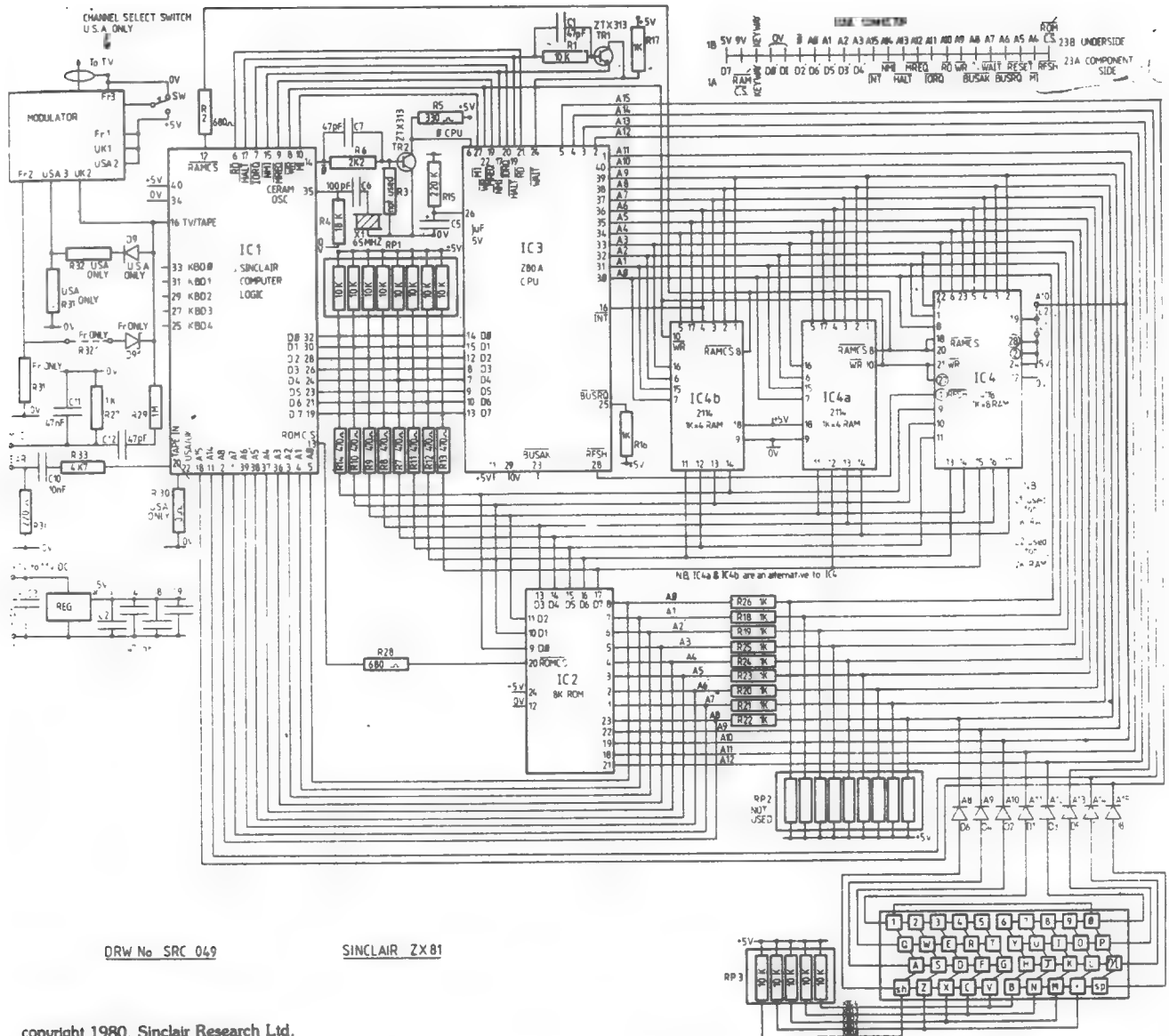
DRW No SRC 049   SINCLAIR ZX81

CATS GIVE WOOD "SCRATCH"

Looking for an exceptional Christmas gift for your favorite SINCLAIR-afficionado?

David B. Wood of Lexington, MA has written and published an exceptional book titled: A Practical Guide to Machine Language Programming on the Timex/Sinclair 1500 and 1000 (and ZX-81). Its 250 pages describe how to program within the specific ROM environment of the early Sinclair family of machines. It also has a catalog of 100 ROM routines and how to use them.

The text features a style that is both understandable and useful to the machine language hobbyist.

C.H. (Hank) Dickson will be placing an order for another batch of these books immediately following the December CATS meeting. The copies should arrive in CATS-land the following Wednesday.

Though selling for $14.95 in bookstores, this volume is available to the CATS mass-purchasers for an even $10, all costs included. See Hank Dickson during or after the December meeting to place your order.

CATS, incidentally, has purchased more copies of Wood's machine language book than any other Timex/Sinclair group in the U.S.!
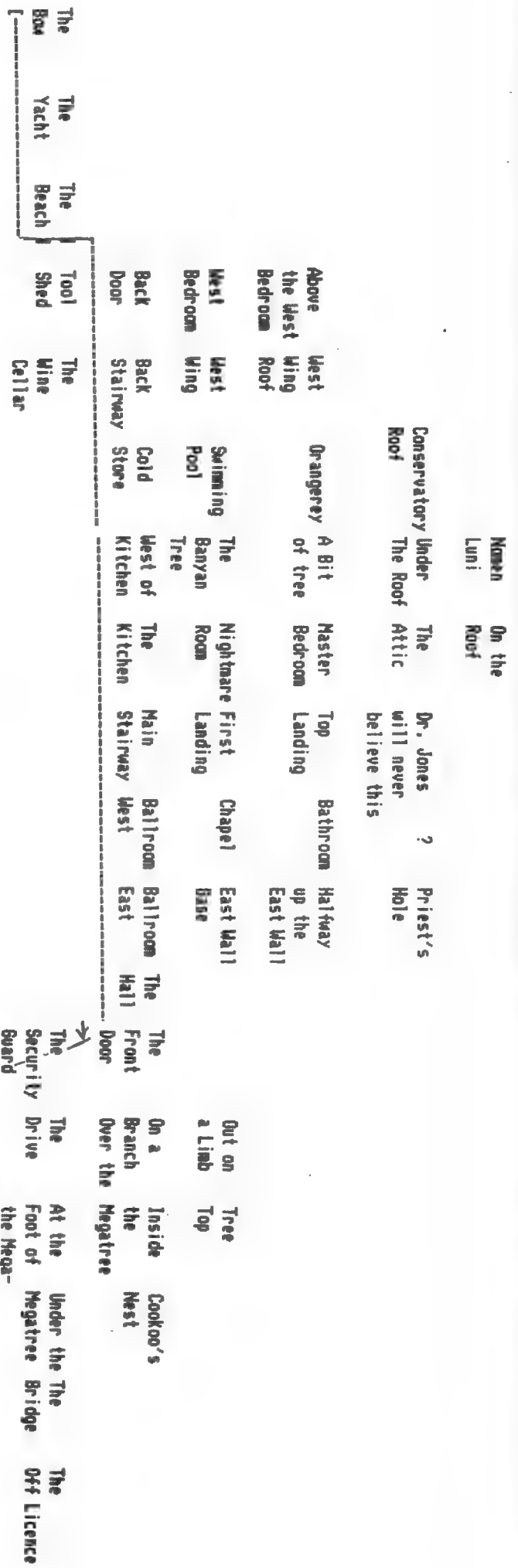
More Game Info
Jet Set Willy Edition
by Mark Fisher

Jet Set Willy offers an immense number of rooms to explore – and an even greater number of ways to die quickly. Perhaps the following map will help you explore Willie's house. I know that there are even further rooms that aren't listed on this map – if you discover new territory (especially the tunnels under the guards), write up the exploration and share it with the rest of us.

```
CHECK SUM (13 bytes)
This routine when use with
LET Z=USR XXXX will return with
a number in z that will be the
one number if the program loaded
correctly. The following
statement could be used to check
the program:
IF Z<>xx THEN STOP
where xx=the correct loading
number.
NN=hex length of MC to be
checked
PP=hex address where MC starts
(NN & PP are Low High order)
21 PP PP   LD HL,address
97         SUB A
06 NN      LD B,length
86         ADD A,(HL)
23         INC HL
05         DEC B
20 FB      JR NZ FB
4F         LD C,A
C9         RET
```

Brian Little

NOT TONIGHT. I'VE GOT A HEADACHE.

NATIONAL ENQUIRER

LIEBE

Map (room names):

- The Bow
- The Yacht
- The Beach

				Nomen Luni	On the Roof			
Conservatory Roof	Under The Roof	The Attic	Dr. Jones will never believe this	?	Priest's Hole			
Above the West Wing Roof	West Roof	Orangerey	A Bit of tree	Master Bedroom	Top Landing	Bathroom Halfway up the East Wall		
West Bedroom Wing	West Wing	Swimming Pool	The Banyan Tree	The Nightmare Room	First Landing	Chapel	East Wall Base	
Back Door	Cold Store	West of Kitchen	The Kitchen	Main Stairway West	Ballroom West	Ballroom East	The Front Hall	The Door
Tool Shed	The Wine Cellar	Back Stairway Store						

- The Security Guard
- The Security Drive
- At the Foot of Megatree
- On a Branch Over the Megatree
- the Nest
- Out on a Limb
- Tree Top
- Inside Cookoo's Nest
- Under the Megatree Bridge
- The The Mega-tree
- Off Licence

SWAT TEAM DESCENDS UPON TACOMA INST.

The CATS contingent of SWAT (Special Workers and Teachers) people landed at the Takoma Institute with its customary big splash in late October when it presented an entertaining and informative evening exploring "Computer Awareness for Adults".

Now in its third "semester", the Takoma Institute offers a series of one-night stands on subjects of particular interest to its Takoma Park clientele. It is run by the Takoma Park Library, headed by Ms. Ellen Robbins.

The evening of Tuesday, October 29, 1985 the informal CATS "hardcore" meeting moved a few blocks down Maple Avenue to the T.K. municipal building.

Assembled there was a group of ten curious and interested students who carried out their first-hand computer exercises through sharing the use of five complete Timex/Sinclair systems. The five CATS members who assisted with this activity were:

    C. H. Dickson
    Mark Fisher
    Sam Lefkov
    Sy Fellerman
    Akin Olowofoyeku

Two-thirds of the students were women interested in augmenting their knowledge about electronic things so as to be able to keep up with family, friends, and co-workers.

The group was bright and perky. After C.H. Dickson's introduction to the Sinclair keyboard in particular and computers in general, they got down to the serious business of programing in the Mark Fisher style. Before the evening was over, everyone had taken part in programing a fairly involved mathematical game.

The Takoma Institute participants departed feeling they had taken a large step in dispeling some of the mystery surrounding "those computer things". They are to be commended for the effort expended in making such a step. The CATS members who helped make the evening possible are also to be commended.

Special incredible commendation should go to Sy Fellerman and Mark Fisher who performed an impromptu operation on an old oriental TV set, and got it running in time for the class members to use it as a monitor.

This line drawing by a member of the Takoma Park library staff was used in describing the "peanut butter-and-jelly" talk given at the CATS computer awareness session for children in the Takoma Park municipal building last August. The drawing, which originally appeared in the Takoma Park Newsletter, was inadvertently left out of the October CATS Newsletter which included a description of the event.

Block Moves in BASIC Programs

by Mark Fisher

Sinclair's line editor for BASIC programs leaves a lot to be desired. (This is a common failing among micros – even the MAC isn't much better.) One feature that most word processors offer is block moves, where a sentence or paragraph can be transferred to a new position within the document.

When working on a long program, there may be times where you would like to move a subroutine to the front to improve its speed, or move a little-used routine to the back to improve the general flow of the program. Neither Sinclair nor any other micro allows you to do this, but you can use the 2068's DELETE and MERGE to allow block moves of program lines within a program.

There is one item that is needed before blocks can be easily moved; that is a renumber utility (other computers do offer this). For the 2068, the routine below will do the job.

The routine requests three numbers; "Start"&"End" represent the current line numbers to be changed, and "Start renumber" is the new value to begin renumbering from. N holds the new line value to be inserted, and line 9100 controls the increment size – now set at 10.

The routine is fairly bombproof – just remember to change GOTOs and GOSUBs to the new values. Doing an LLIST before renumbering can be an aid to correctly changing the GOTOs. If you accidentally end up with line numbers out of order, renumber the entire program before attempting to RUN

Block Moving

Once the renumber utility is in, there are four steps to transferring a block of code.

```
9000>REM ********** Renumber and
Save ***************************
9010 INPUT "Start ";start
9020 INPUT "End ";end
9030 IF end>=9000 THEN  LET end=9
000
9040 INPUT "Start renumber using
";n
9050 LET x=PEEK 23635+256*PEEK 23
636
9060 IF PEEK x*256+PEEK (x+1)<sta
rt THEN  GO TO 9110
9070 IF PEEK x*256+PEEK (x+1)>=en
d THEN  STOP
9080 POKE x,INT (n/256)
9090 POKE x+1,n-PEEK x*256
9100 LET n=n+10
9110 LET x=x+4+PEEK (x+2)+PEEK (x
+3)
9120 GO TO 9060
```

1. Find a block of numbers big enough to hold the subroutine to be moved. If necessary, the renumber utility can be used to open up a group of lines at the desired value.
2. SAVE off the complete program. If you're chicken, like me, VERIFY the SAVE.
3. DELETE all line numbers not in the section to be transferred, or the renumbering routine. DELETE 1,2000 will delete lines 1 through 2000; If you want to keep 2000, use DELETE 1,1999. It will take two DELETEs; one for the numbers below your block, and one for the numbers between your block and 9000
4. MERGE the original program together with the newly numbered lines. MERGE preserves all lines of program and variables; however, if a line has the same number or a variable has the same name in the memory and on the tape, the tape's version is substituted.

That's all there is to it. It's much faster than EDITing each line and changing each line number. Happy coding!
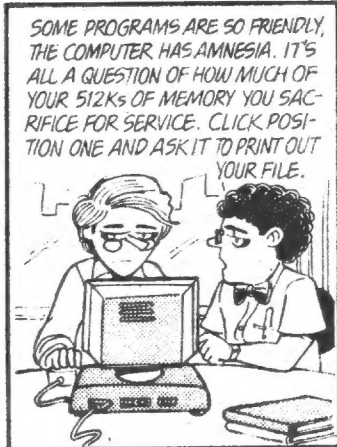
Capitol Area Timex/Sinclair Users' Group
P.O.Box 725
Bladensburg, MD 20710

Name _____

Address _____

_____ ZIP _____

Phone   Home _____ Office _____

Memberships - $15.00 (family/individual);make checks payable to C.A.T.S.

If family membership, please list family members participating:

_____

Occupation _____

Ham Radio call sign _____

Equipment

ZX 80   _____   RAM size _____

MA 80   _____   full keyboard _____

ZX 81   _____   Printer _____

TS 1000   _____   type _____

TS 2000   _____   other interface _____

Special interest use for computer: ie, games, ham radio interface,

business, other, etc. _____

_____

Languages: Basic _____   Other _____

            Machine _____   _____

No. of years computer experience _____

What committees would you like to serve on? _____

_____

Comments: *Where did you hear of C.A.T.S.?*

_____

- -

Do not write below:

Dt. Pd. _____   Amt. _____   Membership No. _____

Ca. _____   Ck. _____

C.A.T.S. 15 December

The mailing address of the Capitol Area Timex/Sinclair User's Group is:

Capitol Area Timex/Sinclair User's group
P.O. Box 725
Bladensburg, MD 20710

CATS is a non-profit special interest organization dedicated to serving the interests of those who own, use, or are interested in learning more about the Timex/Sinclair family of personal computers.
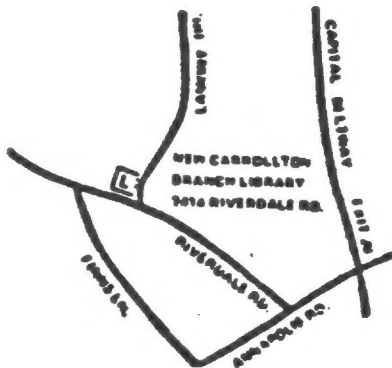
The official contact person for CATS is JULES GESANG:

301#922-0767

Meetings are held on the second Saturday of each month at 2 P.M. in the large meeting room of the New Carrollton Branch Public Library.

Ham Radio Network Information
O2X Net...Wednesdays, 9p.m. local time; 14.345 MHz NV4F NCS
Eastern Regional Sinclair Net...Sundays, 1600 Z; 7.245 MHz
K2ZF NCS

CATS Newsletter
P.O. Box 725
Bladensburg MD   20710

The next meeting of CATS will be on:
Saturday, December 14.
11:00 AM Hardware Meeting
 2:00 PM General Meeting

New Carrolton Public Library
7414 Riverdale Road, New Carrolton, MD

IF YOU ARE NOT A MEMBER OF CATS. THIS IS THE ONLY ISSUE YOU WILL RECIEVE
Dues = $15.00 per year, per family.

DATED   MATERIAL